
 Universitas Airlangga	SEMESTER LEARNING PLAN		Prepared by	Examined by	Approved by	Document Registration Number
	SLP		(Person in Charge)	(Head of Bachelor Program / Head of Department)	Vice Dean I	01/S1Kesmas/RPS/2019
			Revision - Date	January 1 st , 2019	dr. Sho'im Hidayat, MS	
Faculty of Public Health	Valid on Semester (odd/even) / Academic Year	Even Semester	(sign)	(sign)	(sign)	

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A. DETAILS OF COURSE


1. Course Name	Occupational Toxicology I
2. Course Code	FAT304
3. Credits (SKS)	2 (two) SKS
4. Semester / Term	VI (sixth)
5. Study Program	Bachelor of Public Health
6. Student Learning Achievement	<ol style="list-style-type: none"> 1. Able to carry out a study and analysis of the situation 2. Able to develop policy and program planning
7. Course Learning Achievement	<ol style="list-style-type: none"> 1. Define the problem correctly 2. Evaluating data integrity and comparability 3. State the policy choices and formulate them clearly and concisely 4. Decide the appropriate action with the problem in hand
8. Course Description	This course discusses the basic principles of toxicology which include 1) Physico-chemical properties of toxic substances, 2) toxico kinetics, 3) toxicodynamics, 4) understanding the toxicological principles of chemicals circulating in target organs
9. Course Prerequisites (if any)	Passed Biomedical subjects 1&2
10. Instructor	dr. Sho'im Hidayat, MS
11. Teaching Assistants	<ol style="list-style-type: none"> 1. Dr. Abdul Rohim Tualeka, Drs., M.Kes 2. Dani Nasirul Haqi, S.KM., M.KKK 3. Putri Ayuni Alayyannur, S.KM., M.KKK

B. TEACHING PROGRAM

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			dr. Sho'im Hidayat, MS	Dr. Diah Indriani, S.Si., M.Si	Dr. Santi Martini, dr., M.Kes	
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Week	Skills expected at the end of each learning phase (Sub-Course Achievement) (C, A, P)	Study Materials	Teaching Methods	Additional Materials for Learning	Meeting Time	Course Objectives	Criteria and Indicator of Evaluation / Measurable Learning Outcome (hard and soft skills)	Mark / Grade / Percent age (%)	Reference Number Ref. (number)
1	2	3	4	5	6	7	8	9	10
1	Students are able to understand the scope and history of the development of industrial toxicology	General description of industrial toxicology 1. Learning contract 2. Introduction to industrial toxicology 3. The history of industrial toxicology in the world and in Indonesia	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Introduction 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	7,14%	1-5
2	Students are able to discuss and explain physico-toxic chemicals	Physico-chemical description of toxic substances. 1. Definiton of chemicals	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	14,28%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Definition of physical and chemical properties 3. Definition of toxicants and terminology in toxicology 4. Chemical properties of toxic substances 5. Physical properties of toxic materials 6. Exposure to toxic materials							
3	Students are able to discuss and explain physico-toxic chemicals	Physico-chemical description of toxic substances. 1. Definiton of chemicals	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion	Practice in understanding toxicological principle	14,28%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Definition of physical and chemical properties 3. Definition of toxicants and terminology in toxicology 4. Chemical properties of toxic substances 5. Physical properties of toxic materials 6. Exposure to toxic materials				3. Take notes and provide responses			
4	Students are able to solve and explain the concentration of toxic substances in the workplace	Scope of toxic concentrations. 1. Definition of concentration	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion	Practice in understanding toxicological principle	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Definition of toxic concentration 3. Concentration and Role of Toxic Material Concentration in the workplace				3. Take notes and provide responses			
5	Students are able to solve and explain toxicokinetics of toxic materials	Toxicokinetic scope. 1. Entrance route 2. Absorption of toxic materials 3. Distribution of toxic materials 4. Storage of toxic materials 5. Excretion of toxic substances	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	35,7%	1-5

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1	2	3	4	5	6	7	8	9	10
		a. 6.Biotransformation of toxic substances							
6	Students are able to solve and explain toxicokinetics of toxic materials	Toxicokinetic scope. 1. Entrance route 2. Absorption of toxic materials 3. Distribution of toxic materials 4. Storage of toxic materials 5. Excretion of toxic substances 6.Biotransformation of toxic substances	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	35,7%	1-5
7	Students are able to solve and explain toxicokinetics of toxic materials	Toxicokinetic scope. 1. Entrance route	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing	Practice in understanding	35,7%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Absorption of toxic materials 3. Distribution of toxic materials 4. Storage of toxic materials 5. Excretion of toxic substances 6. Biotransformation of toxic substances				2. Pay attention and discussion 3. Take notes and provide responses	toxicological principle		
MID-TERM EXAMINATION									
8	Students are able to solve and explain toxicokinetics of toxic materials	Toxicokinetic scope. 1. Entrance route 2. Absorption of toxic materials 3. Distribution of toxic materials	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	35,7%	1-5

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1	2	3	4	5	6	7	8	9	10
		4. Storage of toxic materials 5. Excretion of toxic substances 6. Biotransformation of toxic substances							
9	Students are able to solve and explain toxicokinetics of toxic materials	Toxicokinetic scope. 1. Entrance route 2. Absorption of toxic materials 3. Distribution of toxic materials 4. Storage of toxic materials 5. Excretion of toxic substances	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	35,7%	1-5

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1	2	3	4	5	6	7	8	9	10
		6.Biotransformation of toxic substances							
10	Students are able to solve and explain toxicodynamics of toxic materials	Toxicodynamic scope. 1. Definition of toxic effects 2. Factors that affect toxic effects	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	14,28%	1-5
11	Students are able to solve and explain toxicodynamics of toxic materials	Toxicodynamic scope. 1. Definition of toxic effects 2. Factors that affect toxic effects	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	14,28%	1-5
12	Students are able to solve and explain the response dose of toxic materials	Scope of dose response . 1. Definition of dosage	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion	Practice in understanding toxicological principle	7,14%	

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1	2	3	4	5	6	7	8	9	10
		2. Definition of dosage and response 3. The concept of dose response 4. Dose response response				3. Take notes and provide responses			
13	Students are able to answer and explain the interactions of toxic materials	Scope of interaction of toxic materials. 1. Understanding the interaction of toxic substances 2. The process of interaction of toxic materials	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice in understanding toxicological principle	7,14%	
14	Students are able to discuss and explain environmental monitoring	1. Scope environmental monitoring.	Lecture Discussion Simulation	Teaching Material LCD	1x2x50 menit	1. Asking questions and discussing 2. Pay attention and discussion	Practice in understanding toxicological principle	7,14%	

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1	2	3	4	5	6	7	8	9	10
		2. Definition of biological monitoring 3. Definition of environmental monitoring 4. Biological and environmental monitoring processes Evaluation of biological and environmental monitoring				3. Take notes and provide responses			
FINAL TERM EXAMINATION									

C. REQUIRED TEXTS / REFERENCES / ESSENTIAL READINGS

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1. Pattys Industrial Hygiene & Toxicology
2. Higiene Perusahaan & Kesehatan Kerja, Suma'mur PK, 2009.
3. Toxicology tutor I-III, US Department of Health & Human Services, 2002
4. Toxicology in Occupational & Environmental Setting, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim
5. (Penterjemah), tidak dipublikasikan Kim Anderson & Ronald Scott, Dasar-dasar Toksikologi Industri, Sho'im Hidayat